

**ECE 1010 – Fundamentals of Electronics and Machines
Spring 2012**

CATALOG DESCRIPTION:

Basic principles, characteristics, and applications of semiconductor devices, AC machines, and DC machines. May not be used as prerequisite for other ECE courses. Cannot be used as credit in engineering curricula. Prerequisites: ECE 1000.

TEXTBOOK:

Principles of Electric Circuits (Conventional Current Version) by Thomas L. Floyd, 9th edition, Prentice Hall, 2010 (Required)
Experiments in Basic Circuits by David M. Buchla, 9th edition, Prentice Hall, 2010 (Required)

REQUIRED MATERIAL:

Scientific calculator with inverse trigonometric capability (I will demonstrate how to solve some problems using the TI-89. Other calculators work differently and I may or may not be able to help you with them, but I will only do so during office hours, not during class time).
Digital multimeter (The IEEE student branch sells the Sears Craftsman 82139 at cost. This multimeter is recommended – but any digital multimeter will do.)

INSTRUCTOR: Dr. Ralph Tanner
Office: B233 West Wing – Parkview Campus
Phone: 276-3162
Email: tanner.s12@att.net
Open Office Hours: TR 12:30 – 1:30
Other Office Hours: By appointment.

I am willing and available to schedule other times with students. However, because others may have already scheduled appointments, this sometimes means a delay between when you may request an appointment and the time I am able to meet with you. Please consider this and try to plan ahead.

EVALUATION:

Exam 1	20%
Exam 2	20%
Exam 3	20%
Final Exam	20%
Lab	15%
Homework/pop quizzes	<u>5%</u>
Total	100%

GRADING SCALE:

92-100	A
87-91	BA
82-86	B
77-81	CB
72-76	C
67-71	DC
62-66	D
0-61	E

OUTLINE:

1. Introduction to Alternating Current and Voltage - Ch 11
2. Capacitors ----- Ch 12
3. Inductors ----- Ch 13
4. Transformers----- Ch 14
- Exam 1
5. RC Circuits ----- Ch 15
6. RL Circuits----- Ch 16
7. RLC Circuits and Resonance----- Ch 17
- Exam 2
8. Passive Filters ----- Ch 18
9. Circuit Theorems in AC Analysis ----- Ch 19
10. Time Response of Reactive Circuits----- Ch 20
- Exam 3
11. Three-Phase Systems in Power Applications----- Ch 21

PERFORMANCE CRITERIA:

- All exams will be open book and open notes. However, any notes must be in your own handwriting and may not be duplicated copies of someone else's notes. Students must bring their own No. 2 pencil to the exam. Students may NOT share books, notes, or calculators during the examinations and quizzes. **Cell phones are not allowed during exams. If I observe you with a cell phone, I will neither confiscate it nor tell you to put it away. Instead, I will document its existence, mark your exam as a failure when I grade it, and refer you to the Office of Student Judicial Affairs.**
1. Exam 1. The first exam will be given on Thursday, February 16. There will be a review for Exam 1 on Tuesday, February 14. Although the first exam will concentrate upon the material from chapters 11 through 14, it may also cover some topics from ECE 1000. This exam will account for 20% of the grade.
 2. Exam 2. The second exam will be given on Thursday, March 22. There will be a review for Exam 2 on Tuesday, March 20. Although the second exam will concentrate on the material from chapters 15 through 17, it may also cover some topics from earlier chapters. This exam will account for 20% of the grade.
 3. Exam 3. The third exam will be given on Thursday, April 12. There will be a review for the third exam on Tuesday, April 10. Although it will concentrate on the material from chapters 18 & 19, it may also cover some topics from earlier chapters. This exam will account for 20% of the grade.
 4. Final Exam. The final exam will be held on Wednesday, April 25, from 8:00 a.m. to 10:00 a.m. The final exam will be comprehensive, covering all materials that were covered for the entire semester. The final exam will account for 20% of the grade.

If you have a **B average or better** on the first three exams **AND a C average or better** on the required homework, you may choose to skip the final exam. In that case, your average from the first three exams will count as your final exam grade. If you take the final exam, your final exam grade will be used. This option is only available to students that have a **B average or better** on the first three exams **AND a C average or better** on the required homework.
 5. Laboratory: All students must take the laboratory in this class. Your laboratory grade will account for 15% of the grade. You must pass the laboratory to pass the course.
 6. Homework/quizzes: Homework assignments will be made every class meeting. The homework marked "(R)" (required) will count toward the exemption listed in 4 above. Extra credit homework will also be assigned and this will count toward the course grade but may not be used for exemption from the final. Homework is due before the lecture starts on the next class meeting and will NOT be accepted late.

Quizzes will be given most every class period cannot be made up if missed. Quizzes are closed book unless stated otherwise, but you may use your notes and calculator. However, you may not borrow your neighbor's notes or calculator. The total of all homework and pop quizzes will account for 5% of the grade.

Make-up Examinations: If you feel that you have a valid reason to miss an examination, you must validate that reason with appropriate documentation from your doctor, the police, or the funeral home. The make-up examination **WILL BE MORE DIFFICULT** than the original examination.

All your work (including HW) is expected to be your own work. You can work on the assignments in groups but you need to submit your own homework. You are responsible for making yourself aware of and understanding the policies and procedures in the Undergraduate (pp. 271-272) Catalog that pertain to Academic Integrity. These policies include cheating, fabrication, falsification and forgery, multiple submission, plagiarism, complicity and computer misuse. If there is reason to believe you have been involved in academic dishonesty, you **WILL** be referred to the Office of Student Judicial Affairs. You will be given the opportunity to review the charge(s). If you believe you are not responsible, you will have the opportunity for a hearing. You should consult with me if you are uncertain about an issue of academic honesty prior to the submission of an assignment or test.

ORGANIZATION OF WORK

Homework and Quizzes must be done on Engineering Calculation paper. It must be clean work. Each sheet must contain your name, your lab section, and the date. Homework pages must be **stapled** together.

For homework: Each problem must begin on a new page and must **EXPLICITLY** include 1) a statement of the problem, 2) a statement of the known values, 3) a solution section detailing the steps of solution, and 4) a statement of the answers.

COURSE COORDINATOR: Dr. Ralph Tanner, ECE Department, 276-3162